

ABSTRACT OF THE DISCLOSURE

A method for the determining ultrasonic sound propagation speed and wall thickness of a tubular object. Time-domain and frequency-domain analyses are used, where the latter can determine acoustic dispersion if the specimen is made up of a dispersive material. Data is sensed from a series of transmitted ultrasonic waves, some of which are reflected. The data can be used to calculate speed of sound in the tube, as well as wall thickness. Inherent in the data is the speed of the ultrasonic wave; accordingly, correction for temperature variations in the tube is not required. The calculations based on measured speed of sound quantities produces more accurate results than in calculations where the speed of sound in the specimen is assumed.